

FORM PTO-1390 (REV. 5-93)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER 10191/2294	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 10/070652	
INTERNATIONAL APPLICATION NO. PCT/DE00/02915		INTERNATIONAL FILING DATE (25.08.00) 25 August 2000		PRIORITY DATE(S) CLAIMED (09 09 99) 9 September 1999	
TITLE OF INVENTION METHOD AND SYSTEM FOR TRANSMITTING INFORMATIONAL CONTENT DATA					
APPLICANT(S) FOR DO/EO/US HASEMANN, Joerg-Michael					
Applicant(s) herewith submit to the United States Designated/Elected Office (DO/EO/US) the following items and other information					
1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.					
2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.					
3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)) immediately rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1)					
4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.					
5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))					
a. <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).					
b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau.					
c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US)					
6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).					
7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))					
a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau)					
b. <input type="checkbox"/> have been transmitted by the International Bureau					
c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired					
d. <input checked="" type="checkbox"/> have not been made and will not be made.					
8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).					
9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)) (unsigned).					
10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).					
Items 11. to 16. below concern other document(s) or information included:					
11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.					
12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.					
13. <input checked="" type="checkbox"/> A FIRST preliminary amendment.					
<input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.					
14. <input checked="" type="checkbox"/> A substitute specification and a marked-up version of the substitute specification.					
15. <input type="checkbox"/> A change of power of attorney and/or address letter.					
16. <input checked="" type="checkbox"/> Other items or information. International Search Report (translated), International Preliminary Examination Report (translated) and Form PCT/RO/101.					

U.S. APPLICATION NO. if known, see 37 C.F.R. 1.5 <div style="font-size: 2em; font-weight: bold;">10/070652</div>	INTERNATIONAL APPLICATION NO PCT/DE00/02915	ATTORNEY'S DOCKET NUMBER 10191/2294
17. <input checked="" type="checkbox"/> The following fees are submitted Basic National Fee (37 CFR 1.492(a)(1)-(5)): Search Report has been prepared by the EPO or JPO \$890.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) . \$710.00 No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) ... \$740.00 Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$1,040.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) \$100.00		<div style="border-bottom: 1px solid black; padding-bottom: 5px;">CALCULATIONS PTO USE ONLY</div>
ENTER APPROPRIATE BASIC FEE AMOUNT =		\$ 890
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e))		\$
Claims	Number Filed	Number Extra
Total Claims	18 - 20 =	0
Independent Claims	2 - 3 =	0
Multiple dependent claim(s) (if applicable)		+ \$280.00
TOTAL OF ABOVE CALCULATIONS =		\$ 890
Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28)		\$
SUBTOTAL =		\$ 890
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f))		+
TOTAL NATIONAL FEE =		\$ 890
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property		+
TOTAL FEES ENCLOSED =		\$ 890
		Amount to be refunded \$
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a. <input type="checkbox"/> A check in the amount of \$_____ to cover the above fees is enclosed. b. <input checked="" type="checkbox"/> Please charge my Deposit Account No. <u>11-0600</u> in the amount of \$890.00 to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>11-0600</u> . A duplicate copy of this sheet is enclosed. NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.437(a) or (b)) must be filed and granted to restore the application to pending status. SEND ALL CORRESPONDENCE TO Kenyon & Kenyon One Broadway New York, New York 10004 CUSTOMER NO. 26646		

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NAME

3/8/2002

DATE

By

Reg. No.

33,865

Karen C

DEBIT

[10191/2294]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Joerg-Michael HASEMANN
Serial No. : To Be Assigned
Filed : Herewith
For : METHOD AND SYSTEM FOR
TRANSMITTING INFORMATIONAL
CONTENT DATA
Art Unit : To Be Assigned
Examiner : To Be Assigned

Assistant Commissioner
for Patents
Washington, D.C. 20231

**PRELIMINARY AMENDMENT AND
37 C.F.R. § 1.125 SUBSTITUTE SPECIFICATION STATEMENT**

SIR:

Please amend without prejudice the above-identified application before examination, as set forth below.

IN THE SPECIFICATION AND ABSTRACT:

In accordance with 37 C.F.R. § 1.121(b)(3), a Substitute Specification (including the Abstract, but without claims) accompanies this response. It is respectfully requested that the Substitute Specification (including Abstract) be entered to replace the Specification of record.

IN THE CLAIMS:

Without prejudice, please cancel original claims 1 to 18, and please add new claims 19 to 36 as follows:

--19. (New) A method for transmitting informational content data to a plurality of terminals, the method comprising:

providing the informational content data and informational description data in a memory of at least one information provider station;

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loading the informational content data and the informational description data into a memory of a central information transmission station;

generating an informational content data block based on loaded informational content data and an informational data description block based on loaded informational description data in the central information transmission station;

linking the informational content data block and the informational data description block to a data transmission block; and

transmitting the data transmission block from the central information transmission station to the plurality of terminals.

20. (New) The method of claim 19, further comprising:

checking the data transmission block in at least one of the plurality of terminals by using the informational data description block to determine a relevance of the data transmission block for the at least one of the plurality of terminals.

21. (New) The method of claim 20, further comprising:

storing the data transmission block in an intermediate memory of the at least one of the plurality of terminals if the data transmission block is determined to be relevant, a stored data transmission block being retrievable by a user of the at least one of the plurality of terminals.

22. (New) The method of claim 19, wherein the informational data description block includes informational data records regarding a geographic region of validity, a valid time period, a data format, at least one of a coding and an encryption, and a manner and type of a transmitted data transmission block.

23. (New) The method of claim 19, wherein the informational content data and the informational description data are loaded as a function of a request signal transmitted by the central transmission station to the at least one information provider station.

24. (New) The method of claim 19, wherein the informational content data and the information description data are automatically loaded at regular, settable intervals.

25. (New) The method of claim 19, wherein the data transmission block is automatically transmittable by the information transmission station to the plurality of terminals at regular, settable intervals.
26. (New) The method of claim 19, wherein the data transmission block is simultaneously transmittable by the information transmission station to the plurality of terminals by a distributor network.
27. (New) The method of claim 19, wherein the data transmission block is transmittable in an encrypted manner.
28. (New) The method of claim 19, wherein the informational data description block includes decryption and description data indicating a manner of encrypting the data transmission block.
29. (New) The method of claim 19, wherein encryption data for encrypting the data transmission block is transmittable by the at least one information provider station to the plurality of terminals.
30. (New) The method of claim 19, wherein the informational content data and the informational description data are loadable by the central information transmission station by a first transmission network, and the data transmission block is transmittable to the plurality of terminals by a second transmission network.
31. (New) An information transmission system comprising:
 - at least one information provider station for providing informational content data and informational description data;
 - a first transmission network to transmit the informational content data and the informational description data;
 - a central information transmission station including a memory to store the transmitted data and including a calculation device to generate an informational content data block based on the informational content data and to generate an informational data

description block based on transmitted informational description data, and to link the informational content data block and the informational data description block to a data transmission block; and

a second transmission network for simultaneously transmitting the data transmission block to a plurality of terminals.

32. (New) The information transmission system of claim 31, wherein the first transmission network includes a fixed network.
33. (New) The information transmission system of claim 12, wherein the first transmission network includes the Internet.
34. (New) The information transmission system of claim 31, wherein the second transmission network includes a cellular radio communications network.
35. (New) The information transmission system of claim 31, wherein the plurality of terminals include mobile radio communication stations.
36. (New) The information transmission system of claim 35, wherein the plurality of terminals are connected by a third transmission network to the at least one information provider station to transmit decryption programs.--.

Remarks

This Preliminary Amendment cancels without prejudice original claims 1 to 18 in the underlying PCT Application No. PCT/DE00/02915, and adds without prejudice new claims 19 to 36. The new claims conform the claims to U.S. Patent and Trademark Office rules and do not add new matter to the application.

In accordance with 37 C.F.R. § 1.121(b)(3), the Substitute Specification (including the Abstract, but without the claims) contains no new matter. The amendments reflected in the Substitute Specification (including Abstract) are to conform the Specification and Abstract to U.S. Patent and Trademark Office rules or to correct informalities. As required by 37 C.F.R. § 1.121(b)(3)(iii) and § 1.125(b)(2), a Marked Up Version Of The Substitute Specification

comparing the Specification of record and the Substitute Specification also accompanies this Preliminary Amendment. In the Marked Up Version, underlining indicates added text and bracketing indicated deleted text. Approval and entry of the Substitute Specification (including Abstract) is respectfully requested.

The underlying PCT Application No. PCT/DE00/02915 includes an International Search Report, dated April 3, 2001. The Search Report includes a list of documents that were uncovered in the underlying PCT Application. A copy of the Search Report accompanies this Preliminary Amendment.

The underlying PCT application also includes an International Preliminary Examination Report, dated November 22, 2001. An English translation of the International Preliminary Examination Report accompanies this Preliminary Amendment.

Applicant asserts that the subject matter of the present application is new, non-obvious, and useful. Prompt consideration and allowance of the application are respectfully requested.

Dated: 3/8/2002

Respectfully Submitted,
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[10191/2294]

METHOD AND SYSTEM FOR TRANSMITTING INFORMATIONAL CONTENT DATA

FIELD OF THE INVENTION

The present invention relates to a method and a system for transmitting informational content data to a plurality of terminals.

5

BACKGROUND INFORMATION

It is believed that information is increasingly provided in a multimedia manner in the form of text, image, speech, music, video, etc. by information providers. With the aid of the page description language HTML, information prepared in a multimedia manner may be provided on the world-wide Internet (WWW world wide web) as linked multimedia documents. The individual pages or documents of the provider are typically transmitted point to point, i.e., from the information provider directly to the terminal. To obtain information interesting to him/her, the user of a terminal, e.g., of a computer or a mobile telephone, may establish the connection to the information provider and request the desired information. If, for example, a user residing in the region of Munich would like to receive traffic reports about the Munich area, he/she must request this information from the information provider by establishing a connection to the information provider by a telecommunications network. After establishing a transmission channel to the information provider and the terminal of the user, the desired information is then transmitted to the terminal, e.g., a mobile telephone, as informational content data.

It may be difficult and time-consuming for the user of the terminal to establish the connection to the information provider. Moreover, the connection is established and the informational content data is transmitted at the request of

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the user of the terminal, often at times when it may be costly to transmit informational content data.

5 It is believed that a further disadvantage is that the user of the terminal may not be interested in all of the information provided by the information provider, but only in information relevant to him/her. To obtain the information relevant to him/her, the user of the terminal may select the information provided by the information provider. This selection or choice
10 may also be complicated and time-consuming for the user of the terminal.

SUMMARY OF THE INVENTION

15 It is believed that an exemplary method and exemplary system according to the present invention for transmitting informational content data have the advantage that the user of the terminal receives the information relevant to him/her in a simple and convenient manner.

20 Furthermore, the information relevant to the user of the terminal may be transmitted to him/her in a cost-effective manner.

25 Relevant information may be automatically provided to the user of the terminal by a central information transmission station, without the user of the terminal having to request the information from the information provider.

30 According to an exemplary embodiment of the present invention, the transmitted informational data block is tested in the terminal by an informational data description block for its relevance for the terminal.

35 In another exemplary embodiment according to the present invention, the relevant informational data transmission block is stored in an intermediate memory of the terminal and may be retrieved for the user.

According to yet another exemplary embodiment of the present invention, the informational data description block receives informational data values regarding the geographic region of validity, the valid time interval, the data format, the coding type, as well as the manner and type of transmitted informational content data.

It is believed that this provides the advantage that the informational data blocks transmitted to the user of the terminal may be filtered according to different criteria.

In another exemplary embodiment according to the present invention, the informational content data and the informational description data from the information providers are loaded by the central transmission station as a function of a request signal transmitted from the central transmission station to the information provider.

According to yet another exemplary embodiment of the present invention, the informational content data and the informational description data from the information provider are automatically loaded by the central transmission station at regular, adjustable intervals.

In still another exemplary embodiment according to the present invention, the informational data blocks are automatically transmitted from the information transmission station to the plurality of terminals at regular, adjustable intervals.

According to yet another exemplary embodiment of the present invention, the informational data blocks are simultaneously transmitted from the information transmission station to a plurality of terminals by a distributor network.

Another exemplary embodiment according to the present invention provides for the informational data blocks to be

It is believed that this has the advantage that third parties may access the transmitted content data in a desired manner.

According to yet another exemplary embodiment of the present invention, the informational data description blocks transmitted from the transmission station to the terminals include encryption description data indicating the type of encryption of the transmitted informational data blocks.

It is believed that this has the advantage that the user of the terminal is able to request the corresponding decryption program from the information provider.

According to still another exemplary embodiment of the present invention, the decryption data for decrypting the informational data blocks is transmitted by the information provider in response to a request at the provider's terminal.

According to yet another exemplary embodiment of the present invention, the informational content data and the informational description data from the information provider are loaded by the central information transmission station by a first transmission network, and the informational data blocks are transmitted by the central information transmission station to the terminals by a second transmission network.

According to still another exemplary embodiment of the present invention, the informational data blocks are transmitted by a radio communications network to a plurality of mobile terminals.

It is believed that this provides the advantage that the terminals need not be permanently networked in an expensive manner to the central information transmission station.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a schematic representation explaining the transmission system of the invention for transmitting informational content data to a plurality of terminals.

5 Figure 2 is a flow chart of an exemplary method according to the present invention for transmitting informational content data to a plurality of terminals.

10 Figure 3 is a flow chart of a terminal's receiving operation of the transmitted data in accordance with an exemplary embodiment of the present invention.

DETAILED DESCRIPTION

15 Figure 1 shows a schematic representation of the information transmission system of the invention for transmitting informational content data from information providers to terminals by a central information transmission station.

20 Two information provider stations 1, 2 are shown in Figure 1. The information provider stations are connected by connection leads 3, 4 to a first transmission network 5. A central information transmission station 7 is connected by a connection lead 6 to first transmission network 5. Central
25 information transmission station 7 is connected by a connection lead 8 to a second transmission network 9. A plurality of terminals 15, 16, 17, 18, 19 are connected by leads 10, 11, 12, 13, 14 to second transmission network 9.

30 Both transmission networks 5, 9 may be any transmission network for transmitting data, second transmission network 9 may be, for example, a radio communications network for transmitting data to mobile terminals 15-19.

35 In an exemplary embodiment according to the present invention, the first transmission network is a fixed network, such as, for example, the Internet.

Information for the user of terminals 15-19 is stored in information provider stations 1, 2 in internal storage devices or databases. The first information provider may be a provider of informational traffic data, for example. The second
5 information provider may provide nationwide train schedules, for example. The number of information providers and, thus, the number of information provider stations connected to first transmission network 5 may be as high as desired. The informational data stored in the storage devices of the
10 information provider are loaded by central information transmission station 7 into an internal memory of the information transmission station. The information may be loaded into the internal memory of central information transmission station 7 as a function of a request signal
15 transmitted over transmission network 5 or at regular intervals by information provider stations 1, 2. Second transmission network 9 may permit the simultaneous transmission of information to a plurality of terminals 15-19, for example, by broadcast channels. In another exemplary
20 embodiment according to the present invention, second transmission network 9 is a cellular network. In this exemplary embodiment, terminals 15-19 may be mobile radio communication stations or mobile telephones. .

25 Figure 2 is a flow chart of an exemplary method according to the present invention for transmitting informational content data to a plurality of terminals 15-19.

In a step S1, informational content data and informational
30 description data are made available in a memory of at least one information provider station 1, 2.

In a step S2, the informational content data, e.g.. the informational traffic data or the schedule data, as well as
35 the informational description data are loaded into a memory of central information transmission station 7. The informational

description data is provided by the information providers and indicates which information is involved.

For example, the informational description data may indicate
 5 that the information pertains to schedule data for the German Federal Railway's summer or winter schedule.

In a step S3, informational data blocks based on the loaded
 informational content data and informational data description
 10 blocks based on the loaded informational description data are generated by a calculation device of central information transmission station 7.

In a step S4, the particular informational content data block
 15 and the corresponding informational data description block are linked together to a data transmission block by the calculation device of central information transmission station 7.

20 In a step S5, information transmission station 7 transmits the linked data transmission block by second transmission network 9 to the plurality of terminals 15-19.

In an exemplary method according to the present invention, the
 25 informational content data and the informational description data are loaded by central information transmission station 7 in step S2 as a function of a request signal transmitted by central transmission station 7 by first transmission network 5 to information provider station 2. Alternatively, information
 30 provider stations 1, 2 load the informational content data and the informational description data automatically and at regular, settable intervals in step S2.

The data transmission block transmitted in step S5 by central
 35 information transmission station 7 to devices 15-19 includes an informational data description block. This informational data description block may have a plurality of informational

data records indicating the geographic region of validity, the temporal validity or the valid time period, the data format, the manner in which the data is encoded, and the type of transmitted informational content data. The transmitted geographic region of validity indicates in which geographic region the transmitted information is valid or relevant. In another exemplary embodiment according to the present invention, the data record indicating the geographic region of validity has a hierarchical structure, i.e., the transmitted informational content data is declared valid, e.g., on a nation-wide, city-wide, or cell-wide basis. The geographic regions of validity indicated in the informational data records may also overlap. Several geographic regions of validity may be indicated for the transmitted informational content data.

The informational data description block indicates the type of transmitted informational content data, i.e., whether it is a traffic announcement, city information, etc., and the type of transmitted informational content data, i.e., whether it is text data, video data, voice data, or audio data.

Figure 3 is a flow chart depicting the reception of transmitted data blocks by terminals 15-19.

In a step S6, the relevance or the validity of the transmitted informational data block or content data block is tested by the particular terminal 15-19 using the transmitted informational data description block. For example, terminal 15-19 checks whether the transmitted information is valid with respect to time. If the terminal detects that the transmitted data block is valid, it is stored in an intermediate memory of the terminal in a step S7.

In a step S8, the user of the terminal retrieves the informational content data blocks stored in the intermediate memory to use them. In an another exemplary embodiment

according to the present invention, the transmitted data blocks trigger events or processes in terminals 15-19. For example, content data or documents may be shown on a display of terminal 15-19 daily at a certain time without the user of the terminal having to retrieve the transmitted informational content data block. The user of the terminal may set the time as well as the type of the document to be displayed by a keyboard of terminal 15-19.

Data blocks stored temporarily may be automatically deleted from the intermediate memories of terminals 15-19 when they lose their temporal or local validity. If terminal 15-19 is a mobile telephone, for example, and is moving from a first network cell to a second network cell, those informational content data blocks that are only relevant for the first network cell may be deleted.

The data blocks transmitted by central transmission station 7 by second transmission network 9 to terminals 15-19 may be transmitted in an encrypted manner. In this context, the transmitted informational data description block includes encryption description data informing the user of the terminal of the type of encryption of the transmitted data blocks. The user of the terminal may receive a decryption program for decrypting the data blocks transmitted over transmission network 9 from the appropriate information provider by a third transmission network.

If terminals 15-19 are mobile telephones, the decryption data of the decryption programs may be transmitted to terminal 15-19 by information provider stations 1, 2, such as, for example, as SMS messages in a device-dependent manner, i.e., as a function of the SIM card ID. The decryption data may be renewed at regular intervals.

With regard to the encryption, the user of the terminal may send his/her SIM card to the licensing service provider. The

user may receive a key from the service provider. This key together with the SIM card to which the decryption program in the terminal has direct access permits the decoding or decryption of the data provided by the service provider.

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In another exemplary embodiment according to the present invention, central transmission station 7 constantly receives information regarding the current time as well as the regions in which mobile terminals 15-19 are currently located.

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In still another exemplary embodiment according to the present invention, events linked to specific transmitted data blocks are processed by so-called plug-ins. It is believed that plug-ins have the advantage that they may be precisely adjusted to the needs of the user of the terminal, thereby saving memory space and loading time.

15

An exemplary method and an exemplary system for transmitting informational content data according to the present invention may have many different uses. Examples of applications are providing local information, e.g., city guides, maps, hotel guides, restaurant guides, traffic information, calendar of events, sightseeing tours, bus and train schedules, movie schedules, etc.

25

Events may be initiated or triggered in the terminals by the transmitted data blocks. This results in additional possible uses, e.g. news, stock market ticker with current information, pop-up messages for the end of summer sale, storm warnings, reports of traffic jams on the highway, bypass recommendations, etc. The information may be displayed to the user in terminals 15-19 or communicated acoustically.

30

Central information transmission station 7 may be connected to a plurality of different information providers by different transmission networks. An Internet connection results in further possible uses, e.g., references in the city guide to

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ABSTRACT OF THE DISCLOSURE

A method and a system for transmitting informational content data to a plurality of terminals is provided, in which informational content data and informational description data are provided in a memory of at least one information provider station, the informational content data and the informational description data are loaded into a memory of a central informational transmission station, an informational content data block is generated based on the loaded informational content data and an informational description data block based on the loaded informational description data in the central information transmission station, the informational content data block and the informational data description block are linked to a data transmission block, and the data transmission block is transmitted from the central information transmission station to a plurality of terminals.

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METHOD AND SYSTEM FOR TRANSMITTING INFORMATIONAL CONTENT DATA

Background Information

The present invention relates to a method and a system for transmitting informational content data to a plurality of terminals.

Information is increasingly provided in a multimedia manner in the form of text, image, speech, music, video, etc. by information providers. With the aid of the page description language HTML, information prepared in a multimedia manner is provided on the world-wide Internet (WWW world wide web) as linked multimedia documents. The individual pages or documents of the provider are typically transmitted point to point, i.e., from the information provider directly to the terminal.

To obtain information interesting to him/her, the user of a terminal, e.g. of a computer or a mobile telephone, must establish the connection to the information provider and request the desired information. If, for example, a user residing in the region of Munich would like to receive traffic reports about the Munich area, he/she must request this information from the information provider by establishing a connection to the information provider via a telecommunications network. After establishing a transmission channel to the information provider and the terminal of the user, the desired information is then transmitted to the terminal, e.g. a mobile telephone, as informational content data.

It is difficult and time-consuming for the user of the terminal to establish the connection to the information provider. Moreover, the connection is established and the informational content data is transmitted at the request of the user of the terminal, i.e., often at times when it is particularly costly to transmit informational content data.

A further disadvantage is that the user of the terminal is not interested in all of the information provided by the information provider but only in information relevant to him/her. To obtain the information relevant to him/her, the user of the terminal must select the information provided by the information provider. This selection or choice is also complicated and time-consuming for the user of the terminal.

Summary of the Invention

The method of the present invention for transmitting informational content data having the features of Claim 1 as well as the system for transmitting the informational content data having the features of Claim 13 have the particular advantage that the user of the terminal receives the information relevant to him/her in a simple and convenient manner.

Furthermore, the information relevant to the user of the terminal may be transmitted to him/her in a particularly cost-effective manner.

The idea underlying the present invention is to automatically provide the user of the terminal with relevant information via a central information transmission station without the user of the terminal having to request the information from the information provider.

The dependent claims include advantageous further refinements and improvements of the method of the present invention recited in Claim 1 and of the information transmission system of the present invention recited in Claim 13.

According to a preferred further refinement, the transmitted informational data block is tested in the terminal via an informational data description block for its relevance for the terminal.

In another preferred further refinement, the relevant informational data transmission block is stored in an intermediate memory of the terminal and is able to be called up there for the user.

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According to an additional preferred further refinement, the informational data description block receives informational data values regarding the geographic region of validity, the valid time interval, the data format, the coding type, as well as the manner and type of transmitted informational content data.

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This provides the special advantage that the informational data blocks transmitted to the user of the terminal are able to be filtered according to different criteria.

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In another preferred further refinement, the informational content data and the informational description data from the information providers are loaded by the central transmission station as a function of a request signal transmitted from the central transmission station to the information provider.

20

According to an additional preferred further refinement, the informational content data and the informational description data from the information provider are automatically loaded by the central transmission station at regular, adjustable intervals.

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In an additional preferred further refinement, the informational data blocks are automatically transmitted from the information transmission station to the plurality of terminals at regular, adjustable intervals.

30

According to another preferred further refinement, the informational data blocks are simultaneously transmitted from the information transmission station to a plurality of terminals via a distributor network.

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Another preferred further refinement provides for the informational data blocks to be transmitted from the information transmission station to the terminals in an encrypted manner.

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This has the advantage that third parties are able to access the transmitted content data in a desired manner.

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According to an additional preferred further refinement, the informational data description blocks transmitted from the transmission station to the terminals include encryption description data indicating the type of encryption of the transmitted informational data blocks.

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This has the advantage that the user of the terminal is able to request the corresponding decryption program from the information provider.

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According to another preferred further refinement, the decryption data for decrypting the informational data blocks is transmitted by the information provider in response to a request at the provider's terminal.

25

According to another preferred further refinement, the informational content data and the informational description data from the information provider are loaded by the central information transmission station via a first transmission network, and the informational data blocks are transmitted by the central information transmission station to the terminals via a second transmission network.

30

According to another preferred further refinement, the informational data blocks are transmitted via a radio communications network to a plurality of mobile terminals.

35

This provides the advantage that the terminals do not need to be permanently networked in an expensive manner to the central information transmission station.

5 Brief Description of the Drawings

Exemplary embodiments of the present invention are represented in the drawings and are explained in detail in the following description.

10

The figures show:

15

Figure 1 shows a schematic representation for explaining the transmission system of the invention for transmitting informational content data to a plurality of terminals;

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Figure 2 shows a flow chart of the method of the invention for transmitting informational content data to a plurality of terminals according to the present invention;

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Figure 3 shows a flow chart of a terminal's receiving operation of the transmitted data in accordance with the present invention.

Description of the Exemplary Embodiments

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Figure 1 shows a schematic representation of the information transmission system of the invention for transmitting informational content data from information providers to terminals via a central information transmission station.

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Two information provider stations 1, 2 are shown in the example shown in Figure 1. The information provider stations are connected via connection leads 3, 4 to a first transmission network 5. A central information transmission

station 7 is connected via a connection lead 6 to first transmission network 5. Central information transmission station 7 is connected via a connection lead 8 to a second transmission network 9. A plurality of terminals 15, 16, 17, 18, 19 are connected via leads 10, 11, 12, 13, 14 to second transmission network 9.

Both transmission networks 5, 9 may be any transmission network for transmitting data, second transmission network 9 preferably being a radio communications network for transmitting data to mobile terminals 15-19.

In a preferred specific embodiment, the first transmission network is a fixed network, e.g. the Internet.

Information for the user of terminals 15-19 is stored in information provider stations 1, 2 in internal storage devices or databases. The first information provider may be a provider of informational traffic data, for example. The second information provider provides nationwide train schedules, for example. The number of information providers and, thus, the number of information provider stations connected to first transmission network 5 may be as high as desired. The informational data stored in the storage devices of the information provider are loaded by central information transmission station 7 into an internal memory of the information transmission station. The information is loaded into the internal memory of central information transmission station 7 either as a function of a request signal transmitted over transmission network 5 or at regular intervals by information provider stations 1, 2. Second transmission network 9 preferably renders possible the simultaneous transmission of information to a plurality of terminals 15-19, e.g. via broadcast channels. In a preferred specific embodiment, second transmission network 9 is a cellular network. In this preferred specific embodiment, terminals

15-19 are mobile radio communication stations or mobile telephones.

Figure 2 shows a flow chart of the method of the invention for transmitting informational content data to a plurality of terminals 15-19.

In a step S1, informational content data and informational description data are made available in a memory of at least one information provider station 1, 2.

In a step S2, the informational content data, e.g.. the informational traffic data or the schedule data, as well as the informational description data are loaded into a memory of central information transmission station 7. The informational description data is provided by the information providers and indicates which information is involved.

For example, the informational description data indicates that the information pertains to schedule data for the German Federal Railway's summer or winter schedule.

In a step S3, informational data blocks based on the loaded informational content data and informational data description blocks based on the loaded informational description data are generated by a calculation device of central information transmission station 7.

In a step S4, the particular informational content data block and the corresponding informational data description block are linked together to a data transmission block by the calculation device of central information transmission station 7.

In a step S5, information transmission station 7 transmits the linked data transmission block via second transmission network 9 to the plurality of terminals 15-19.

In a preferred specific embodiment of the method of the present invention, the informational content data and the informational description data are loaded by central information transmission station 7 in step S2 as a function of
5 a request signal transmitted by central transmission station 7 via first transmission network 5 to information provider station 2. Alternatively, information provider stations 1, 2 load the informational content data and the informational description data automatically and at regular, settable
10 intervals in step S2.

The data transmission block transmitted in step S5 by central information transmission station 7 to devices 15-19 includes an informational data description block. This informational
15 data description block has a plurality of informational data records indicating the geographic region of validity, the temporal validity or the valid time period, the data format, the manner in which the data is encoded, and the type of transmitted informational content data. The transmitted
20 geographic region of validity indicates in which geographic region the transmitted information is valid or relevant. In a preferred further refinement, the data record indicating the geographic region of validity has a hierarchical structure, i.e., the transmitted informational content data is declared
25 valid, e.g. on a nation-wide, city-wide, or cell-wide basis. The geographic regions of validity indicated in the informational data records may also overlap. Several geographic regions of validity may be indicated for the transmitted informational content data.

30 The informational data description block indicates the type of transmitted informational content data, i.e. whether it is a traffic announcement, city information, etc., and the type of transmitted informational content data, i.e., whether it is
35 text data, video data, voice data, or audio data.

Figure 3 shows a flow chart for explaining the reception of transmitted data blocks by terminals 15-19.

In a step S6, the relevance or the validity of the transmitted informational data block or content data block is tested by the particular terminal 15-19 using the transmitted informational data description block. For example, terminal 15-19 checks whether the transmitted information is valid with respect to time. If the terminal detects that the transmitted data block is valid, it is stored in an intermediate memory of the terminal in a step S7.

In a step S8, the user of the terminal calls up the informational content data blocks stored in the intermediate memory in order to use them. In an alternative specific embodiment, the transmitted data blocks trigger events or processes in terminals 15-19. For example, content data or documents are shown on a display of terminal 15-19 daily at a certain time without the user of the terminal having to call up the transmitted informational content data block. The user of the terminal is preferably able to set the time as well as the type of the document to be displayed via a keyboard of terminal 15-19.

Data blocks stored temporarily are preferably automatically deleted from the intermediate memories of terminals 15-19 when they lose their temporal or local validity. If terminal 15-19 is a mobile telephone, for example, and is moving from a first network cell to a second network cell, those informational content data blocks that are only relevant for the first network cell are deleted.

The data blocks transmitted by central transmission station 7 via second transmission network 9 to terminals 15-19 are preferably transmitted in an encrypted manner. In this context, the transmitted informational data description block includes encryption description data informing the user of the

terminal of the type of encryption of the transmitted data blocks. The user of the terminal preferably receives a decryption program for decrypting the data blocks transmitted over transmission network 9 from the appropriate information provider via a third transmission network.

If terminals 15-19 are mobile telephones, the decryption data of the decryption programs is transmitted to terminal 15-19 by information provider stations 1, 2 preferably as SMS messages in a device-dependent manner, i.e., as a function of the SIM card ID. The decryption data is preferably renewed at regular intervals.

With regard to the encryption, the user of the terminal preferably sends his/her SIM card to the licensing service provider. The user receives a key from the service provider. This key together with the SIM card to which the decryption program in the terminal has direct access permits the decoding or decryption of the data provided by the service provider.

In a preferred further refinement, central transmission station 7 constantly receives information regarding the current time as well as the regions in which mobile terminals 15-19 are currently located.

In a further preferred specific embodiment, events linked to specific transmitted data blocks are processed by so-called plug-ins. The advantage of plug-ins is that they may be precisely adjusted to the needs of the user of the terminal, thereby saving memory space and loading time.

The method of the invention and the system of the invention for transmitting informational content data have many different possible uses. Interesting examples of application are providing local information, e.g. city guides, maps, hotel guides, restaurant guides, traffic information, calendar of

events, sightseeing tours, bus and train schedules, movie schedules, etc.

5 Events may be initiated or triggered in the terminals by the transmitted data blocks. This results in additional possible uses, e.g. news, stock market ticker with current information, pop-up messages for the end of summer sale, storm warnings, reports of traffic jams on the highway, bypass recommendations, etc. The information is displayed to the user
10 in terminals 15-19 or is communicated acoustically.

Central information transmission station 7 may be connected to a plurality of different information providers via different transmission networks. An Internet connection results in
15 further possible uses, e.g. references in the city guide to the web sites of different restaurants or references to taxi web sites with ordering capabilities or references to pizza delivery services. If an event is linked to the data block transmitted via transmission network 9 to terminal 15-19, an
20 application such as an Internet browser may be activated in terminal 15-19. The browser then has access to the informational content data stored in the intermediate memory of terminal 15-19.

What is Claimed is:

1. A method for transmitting informational content data to a plurality of terminals using the following steps:
 - (a) providing (S1) informational content data and informational description data in a memory of at least one information provider station (1, 2);
 - (b) loading (S2) the informational content data and the informational description data into a memory of a central information transmission station (7);
 - (c) generating (S3) an informational content data block based on the loaded informational content data and an informational data description block based on the loaded information description data in the central information transmission station (7);
 - (d) linking (S4) the informational content data block and the informational data description block to a data transmission block;
 - (e) transmitting (S5) the data transmission block from the central information transmission station (7) to a plurality of terminals (15-19).
2. The method as recited in Claim 1, wherein the data transmission block in the terminal (15-19) is checked using the informational data description block to determine its relevance for the terminal.
3. The method as recited in Claim 1 or 2, wherein a data transmission block detected as being relevant is stored in an intermediate memory of the terminal (15-19) and is able to be called up by a user of the terminal.
4. The method as recited in one of the preceding claims, wherein the informational data description block includes informational data records regarding the geographic region of validity, the valid time period, the data format, the manner of coding or encryption, and the

manner and type of the transmitted informational content data block.

5. The method as recited in one of the preceding claims, wherein the informational content data and the informational description data are loaded as a function of a request signal transmitted by the central transmission station (7) to the information provider station (1, 2).
6. The method as recited in one of the preceding claims, wherein the informational content data and the information description data are automatically loaded (S2) at regular, settable intervals.
7. The method as recited in one of the preceding claims, wherein the data transmission block(s) is/are automatically transmitted (S5) by the information transmission station (7) to the terminals 15-19 at regular, settable intervals.
8. The method as recited in one of the preceding claims, wherein the data transmission block(s) is/are simultaneously transmitted by the information transmission station (7) to a plurality of terminals (15-19) via a distributor network.
9. The method as recited in one of the preceding claims, wherein the data transmission block(s) is/are transmitted in an encrypted manner.
10. The method as recited in one of the preceding claims, wherein the informational data description block includes decryption and description data indicating the manner of the encryption of the data transmission block.

11. The method as recited in one of the preceding claims, wherein the encryption data for encrypting the data transmission block is transmitted by the information provider station (1,2) to the terminal (15-19).
12. The method as recited in one of the preceding claims, wherein the informational content data and the informational description data are loaded by the central information transmission station (7) via a first transmission network (5), and the data transmission block is transmitted to a plurality of terminals (15-19) via a second transmission network (9).
13. An information transmission system including:
at least one information provider station (1, 2) for providing informational content data and informational description data;
a first transmission network (5) for transmitting the informational content data and the informational description data;
a central information transmission station (7) having a memory for storing the transmitted data and a calculation device for generating an informational content data block based on the informational content data and for generating an informational data description block based on the transmitted informational description data and for linking the informational content data block(s) and the informational data description block(s) to a data transmission block; and
a second transmission network (9) for simultaneously transmitting the data transmission block(s) to a plurality of terminals (15-19).
14. The information transmission system as recited in Claim 13, wherein the first transmission network (5) is a fixed network.

15. The information transmission system as recited in Claim 14, wherein the first transmission network (5) is the Internet.
16. The information transmission system as recited in Claim 13, wherein the second transmission network (9) is a cellular radio communications network.
17. The information transmission system as recited in one of Claims 13-16, wherein the terminals (15-19) are mobile radio communication stations.
18. The information transmission system as recited in Claim 17, wherein the terminals (15-19) are connected via a third transmission network to the information provider stations (1, 2) for transmitting the decryption programs.

Abstract

The present invention provides a method for transmitting informational content data to a plurality of terminals using the following steps: providing (S1) informational content data and informational description data in a memory of at least one information provider station (1, 2); loading (S2) the informational content data and the informational description data into a memory of a central informational transmission station (7); generating (S3) an informational content data block based on the loaded informational content data and an informational description data block based on the loaded informational description data in the central information transmission station (7); linking (S4) the informational content data block and the informational data description block to a data transmission block; transmitting (S5) the data transmission block from the central information transmission station (7) to a plurality of terminals (15-19).

(Fig. 1)

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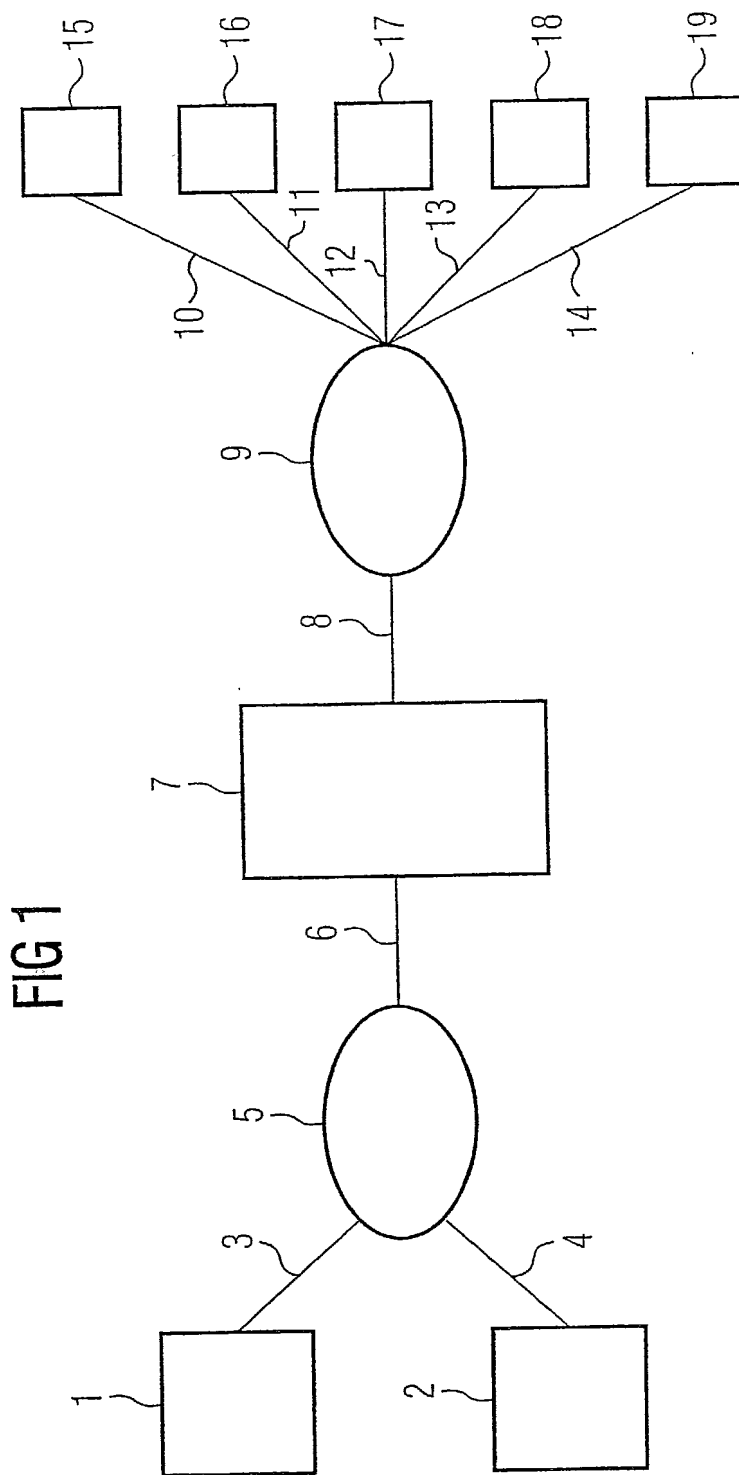


FIG 1

FIG 2

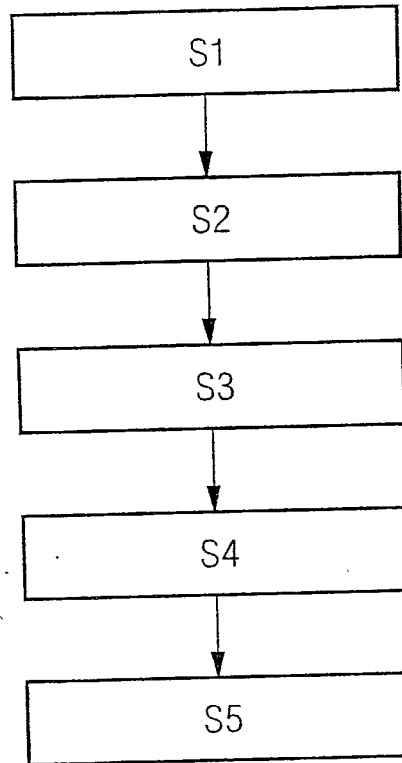
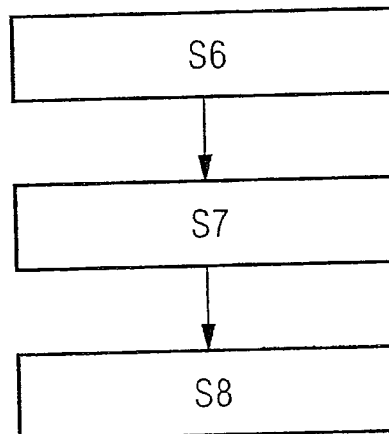


FIG 3



[10191/2294]

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **METHOD AND SYSTEM FOR TRANSMITTING INFORMATIONAL CONTENT DATA**, the specification of which was filed as PCT International Application No. **PCT/DE00/02915** on August 25, 2000.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119, of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

EL 828 245 739
EL 594 613 034

PRIOR FOREIGN APPLICATION(S)

Number	Country filed	Day/month/year	Priority Claimed Under 35 USC 119
199 43 058.6	Fed. Rep. of Germany	09 September 1999	Yes

And I hereby appoint Richard L. Mayer (Reg. No. 22,490) and Gerard A. Messina (Reg. No. 35,952) my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful and false statements may jeopardize the validity of the application or any patent issued thereon.

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